What Is Claimed Is:

1. A method of analyzing a cause of destruction of an assembly, the assembly having an assembled condition at a point in time prior to being destroyed, the method comprising:

obtaining first and second components that formed part of the assembly when the assembly was in the assembled condition and that have been separated from the assembly and each other as a result of the assembly being destroyed by the cause of destruction, the first and second components having an original relative position prior to the assembly being destroyed, the original relative position being that which the first and second components shared relative to each other when the assembly was in the assembled condition;

producing an electronic representation of a three-dimensional surface contour of at least part of each of the first and second components by obtaining measurements of each of the first and second components using a surface contour scanning device;

producing an electronic representation of a portion of the assembly in three-dimensional virtual space, the representation of the portion of the assembly incorporating the representations of the three-dimensional surface contours of the first and second components with the surface contours

positioned relative to each other in the virtual space in a manner based on the original relative position of the first and second components; and

analyzing the cause of destruction of the assembly via the representation of the portion of the assembly.

2. A method in accordance with claim 1 further comprising:

obtaining an electronic database of properties of a plurality of components that are presumed to have been part of the assembly when the assembly was in the assembled condition, the properties being based on geometry that the plurality of components are presumed to have had when the assembly was in the assembled condition, the database also containing information sufficient to determine presumed relative positions between each of the plurality of components, the presumed relative positions being that which the plurality of components shared when the assembly was in the assembled condition;

correlating the first component with a first one of the plurality of components via a comparison of a property of the first component with the properties of the plurality of components, the property of the first component being based on the electronic representation of the three-dimensional surface contour of the first component;

correlating the second component with a second one of the plurality of components via a comparison of a property of the second component with the properties of the plurality of components, the property of the second component being based on the electronic representation of the three-dimensional surface contour of the second component; and

determining the original relative position of the first and second components by assuming the original relative position is the presumed relative position between the first one and the second one of the components contained in the database.

3. A method in accordance with claim 2 wherein the properties of the plurality of components of the database include three-dimensional surface contour properties of the plurality of components, and wherein the property of the first component is the electronic representation of the three-dimensional surface contour of the first component and the property of the second component is the electronic representation of the three-dimensional surface contour of the second component.

4. A method in accordance with claim 2 wherein the properties of the plurality of components of the database include volume properties of the plurality of components, and

wherein the property of the first component is a volume of the first component that is based on the electronic representation of the three-dimensional surface contour of the first component and the property of the second component is a volume of the second component that is based on the electronic representation of the three-dimensional surface contour of the second component.

5. A method in accordance with claim 2 wherein the properties of the plurality of components of the database include moment of inertia properties of the plurality of components, and wherein the property of the first component is a moment of inertia of the first component based on the electronic representation of the three-dimensional surface contour of the first component and the property of the second component is a moment of inertia of the second component that is based on the electronic representation of the three-dimensional surface contour of the second component.

6. A method in accordance with claim 2 wherein the properties of the plurality of components of the database include three-dimensional surface contour properties and moment of inertia properties of the plurality of components, and wherein the property of the first component is the electronic representation of the three-dimensional surface

contour of the first component and the property of the second component is a moment of inertia of the second component based on the electronic representation of the three-dimensional surface contour of the second component.

7. A method in accordance with claim 1 further comprising:

identifying a rest location where the first component was believed to have come to rest after having been separated from the assembly as a result of the assembly being destroyed by the cause of destruction;

identifying a separation location where the first component was believed to have been separated from the assembly as a result of the assembly being destroyed by the cause of destruction; and

determining a trajectory of the first component presumed to be a path traveled by the first component from the separation location to the rest location, the trajectory being dependant on drag properties of the first component determined via the representation of the three-dimensional surface contour of the first component.

8. A method in accordance with claim 7 further comprising:

estimating a rest position of a third component, the

third component being believed to have formed part of the assembly when the assembly was in the assembled condition and believed to have been separated from the assembly as a result of the assembly being destroyed by the cause of destruction, the estimating of the rest position of the third component being dependent on the trajectory of the first component.

9. A method in accordance with claim 1 further comprising:

performing finite element analysis based on the representation of the three-dimensional surface contour of the first component and obtaining results therefrom, the step of analyzing the cause of destruction of the assembly comprising analysis of the results obtained from the finite element analysis.

10. A method in accordance with claim 1 further comprising:

obtaining at least one photographic image of a visual appearance of the surface contour of the first component; and

texture mapping the photographic image onto the representation of the three-dimensional surface contour of the first component, the step of analyzing the cause of destruction of the assembly comprising visual analysis of the representation of the three-dimensional surface contour of the

first component with the texture mapping shown thereon.

11. A method in accordance with claim 1 wherein the electronic representation of the three-dimensional surface contour of at least part of each of the first and second components includes an electronic representation of a three-dimensional fracture surface of the respective component, and wherein the method further comprises identifying one of the first and second components by matching the electronic representations of the three-dimensional fracture surfaces to each other.

12. A method in accordance with claim 1 further comprising the step of fabricating physical models of the first and second components using a digital fabrication technique based upon the electronic representation of the three-dimensional surface contour of each of the first and second components.

13. A method in accordance with claim 12 further comprising physically rigging the physical models of the first and second components based on the original relative position of the first and second components.

14. A method of identifying a component of a dismantled assembly, the assembly having an assembled condition at a point in time prior to being dismantled, the method

comprising:

obtaining an electronic database of properties of a plurality of components that are presumed to have been part of the assembly when the assembly was in the assembled condition, the properties being properties that are based at least in part on geometry that the plurality of components are presumed to have had when the assembly was in the assembled condition;

retrieving a physical component that has been dismantled and separated from the assembly;

identifying a property of the physical component by obtaining measurements of the physical component and by producing an electronic representation of a three-dimensional surface contour of a portion of the physical component based on the measurements; and

correlating the physical component to one of the plurality of components by matching the property of the physical component to one of the properties of the plurality of components of the database.

15. A method in accordance with claim 14 wherein the properties of the plurality of components of the database include an electronic representation of a three-dimensional surface contour definition for a portion of each of the plurality of components, and wherein the property identified in the step of identifying the property of the physical

component is the represented surface contour of the physical component, and yet further wherein the step of correlating the physical component to the one of the plurality of components occurs by matching the represented surface contour of the physical component to the represented surface contour definition of the one of the plurality of components.

16. A method in accordance with claim 14 wherein the properties of the plurality of components of the database include a volume for each of the plurality of components, and wherein the property identified in the step of identifying the property of the physical component is a volume of the physical component that is calculated from the represented surface contour of the physical component, and yet further wherein the step of correlating the physical component to the one of the plurality of components occurs by matching the volume of the physical component to the volume of the one of the plurality of components.

17. A method in accordance with claim 14 wherein the properties of the plurality of components of the database include a moment of inertia for each of the plurality of components, and wherein the property identified in the step of identifying the property of the physical component is a moment of inertia of the physical component that is calculated from

the represented surface contour of the physical component, and yet further wherein the step of correlating the physical component to the one of the plurality of components occurs by matching the moment of inertia of the physical component to the moment of inertia of the one of the plurality of components.

18. A method in accordance with claim 17 wherein the properties of the plurality of components of the database include an electronic representation of a three-dimensional surface contour definition for a portion of each of the plurality of components, and wherein the method further comprises comparing the represented surface contour of the physical component to each of the represented surface contour definitions of the database in an attempt to correlate the physical component to any one of the plurality of components of the database.

19. A method of analyzing a dismantled assembly, the assembly having an assembled condition at a point in time prior to being dismantled, the method comprising:

identifying a component of the dismantled assembly in accordance with claim 14; and

calculating an aerodynamic drag property of the physical component based at least partially on the represented

surface contour of the physical component in an effort to determine a relative velocity and a relative direction between the physical component and the assembly when the physical component was separated from the assembly.

20. A method in accordance with claim 19 wherein the physical component is a first component and wherein the method further comprises locating a second physical component that has been dismantled and separated from the assembly using the relative velocity and the relative direction between the first physical component and the assembly.

21. A method of analyzing a dismantled assembly, the assembly having an assembled condition at a point in time prior to being dismantled, the method comprising:

identifying a component of the dismantled assembly in accordance with claim 14; and

performing finite element analysis based on the represented surface contour of the physical component in an effort to determine forces that acted on the physical component when the physical component was dismantled and separated from the assembly.

22. A method of analyzing a dismantled assembly, the assembly having an assembled condition at a point in time prior to being dismantled, the method comprising:

identifying a component of the dismantled assembly in accordance with claim 14;

obtaining at least one photographic image of a visual appearance of a surface of the physical component that corresponds to the represented surface contour of the physical component; and

texture mapping the photographic image onto the represented surface contour of the physical component.

23. A method in accordance with claim 22 wherein the physical component is a first physical component and wherein the one of the plurality of components is a first one of the plurality of components, the method further comprising;

retrieving a second physical component that has been dismantled and separated from the assembly;

identifying a property of the second physical component by obtaining measurements of the second physical component and by producing an electronic representation of a three-dimensional surface contour of a portion of the second physical component based on the measurements of the second physical component;

correlating the second physical component to a second one of the plurality of components by matching the property of the second physical component to one of the properties of the plurality of components of the database;

obtaining at least one photographic image of a visual appearance of a surface of the second physical component that corresponds to the represented surface contour of the second physical component;

texture mapping the photographic image of the visual appearance of the surface of the second physical component onto the represented surface contour of the second physical component;

creating a digital representation of a portion of the assembly in virtual three-dimensional space, the digital representation of the assembly including the represented surface contours of the first and second physical components oriented relative to each other in the virtual space in a manner based on a presumed relative orientation that the first and second physical components are believed to have had when the assembly was in the assembled condition; and

displaying the represented portion of the assembly on a monitor, the displaying showing the texture mapping of the represented surface contours of the fist and second components.

24. A method of analyzing a dismantled assembly, the assembly having an assembled condition at a point in time prior to being dismantled, the method comprising:

identifying a component of the dismantled assembly in

accordance with claim 14, the physical component being a first physical component and the one of the plurality of components being a first one of the plurality of components;

retrieving a second physical component that has been dismantled and separated from the assembly;

identifying a property of the second physical component by obtaining measurements of the second physical component and by producing an electronic representation of a three-dimensional surface contour of a portion of the second physical component based on the measurements of the second physical component;

correlating the second physical component to a second one of the plurality of components by matching the property of the second physical component to one of the properties of the plurality of components of the database;

fabricating a physical model of each of the first and second physical components using a digital fabrication technique based upon the represented surface contours of the first and second physical components; and

physically rigging the models of the first and second physical components oriented relative to each other in a manner based on a presumed relative orientation that the first and second physical components are believed to have had when the assembly was in the assembled condition.